AAR-100

Human Factors Newsletter # 02-02

January 19, 2002 – February 1, 2002

Technology Transfer Awards: Nominations are now being accepted for the FAA's Technology Transfer Awards and will close February 28, 2002. These awards are designed to recognize FAA's scientific, engineering, and technical employees responsible for inventions, innovations, or other outstanding scientific or technological achievements that contribute to the mission of the FAA or the Federal Government and individuals and organizations that promote the transfer of science and technology. Only FAA employees are eligible to be nominated and to receive awards. Nominations can be made by anyone. For a nomination package or for more information on the awards program contact Maryann Heide at (609) 485-4434 (Maryann.CTR.Heide@tc.faa.gov) or visit the Web site at: www.its.tc.faa.gov/technologytransfer/techtransawards.htm

Remote ARTS Color Display (R-ACD): The R-ACD replaces aging radar displays in air traffic control towers and will be deployed in 2002 to towers associated with ACD-equipped TRACONs. Researchers from the William J. Hughes Technical Center (WJHTC, ACT-530) and the Office of the Chief Scientist for Human Factors (AAR-100) conducted two activities examining the human factors and usability aspects of a candidate R-ACD display. The first activity occurred at the WJHTC Research Development and Human Factors Laboratory and measured display attributes such as contrast ratio for text displayed in several colors and backgrounds. The second activity occurred in the WJHTC Research Tower Cab. Controllers from the R-ACD OT&E team read dynamic data blocks and made usability ratings from multiple viewing distances, viewing angles, and illuminations. The results of these activities provided needed information to the R-ACD program office about the usability of the display and identified areas for future improvement. (K. Allendoerfer, WJHTC; W. Krebs, AAR-100; E. Brix, AAR-100; D. Piccione, AAR-100).

NEXCOM Latency Study: Human factors researchers at the William J. Hughes Technical Center (WJHTC, ACT-530) met with the NEXCOM Human Factors Working Group on January 22 to review the traffic scenarios for the simulation. The group also discussed the planned modifications to the laboratory's communications equipment, which are necessary to conduct the study (R.Sollenberger, WJHTC).

Line Operations Safety Audit: *Aviation Week and Space Technology* carried an article about LOSA entitled "LOSA Shows Promise to Help Increase Air Safety" by Frank Tullo in its January 21, 2002 issue. The article states that **"**One of the biggest challenges in the next century of flight will be improving on the already very low accident rates of major air carriers. A promising step being taken at large airlines around the world is the Line Operations Safety Audit (LOSA). Instead of studying incidents and accidents (failed human performance), LOSA provides a process for analyzing the safety of normal line operations. Rather than focusing on events and finding fault, it offers a systemic and non-punitive assessment by trained observers of everyday operational flights". The article discusses other approaches to gathering safety data (accident/incident investigations, proficiency checks, line checks, Flight Operations Quality Assurance, Aviation Safety Action Program, and NASA's Aviation Safety Reporting System), and describes LOSA. It states:

> "The LOSA process consists of a family of methodologies. In addition to the observations, crewmembers are interviewed and complete questionnaires on safety practices, organizational culture and cockpit management. The key to obtaining useful data is the assurance to crews that all data will be completely de-identified. With this trust, there comes into view a picture of flight operations that is quite different from that obtained by a check airman or an FAA inspector riding (a) jump seat. That numerous instances of procedural and regulatory violations are observed attests to the achievement of trust. Findings include:
>
> - 85% of crew errors are inconsequential. Thus, they are never officially reported, so valuable precursor information is lost. The picture of everyday operations is thus incomplete.
> - Most common flight crew errors involve automation and checklist usage.
> - 71% of flights face at least one external threat to safe operation.
>
> LOSA is certainly no panacea and is most useful in unison with other efforts. But there is no doubt that tangible results have come from these audits. My airline saw a 55% reduction in unstabilized approaches as a result of training developed from findings in LOSA".
>
> "The observation of flight crews on normal flights has long been a goal of many of us in the aviation industry. LOSA gives us the data on not just *what* happens, but why things happen and how flight crews manage operations. The changes arising from the data drawn on these observations should go a long way to increasing flying safety in the next century of flight". (E. Edens, AFS-230)

Laboratory Overview: On January 23rd, personnel from the William J. Hughes Technical Center Research, Development and Human Factors Laboratory gave a briefing to representatives of the Transportation Security Agency (TSA) and the senior industry executives advising Under Secretary of Transportation Magaw on the design of the laboratory. The briefing included an overview of the laboratory, discussions of the human factors projects conducted there, and demonstrations of the prototyping and simulation tools used to conduct research and support acquisition programs. (M. McAnulty, WJHTC/ACT-530)

En Route ATC: An engineering research psychologist, an air traffic control specialist, and several computer specialists from the William J. Hughes Technical Center visited NASA-Ames to discuss the Center-TRACON Automation System (CTAS) En route Descent Advisor (EDA).

The EDA is a concept tool that assists en route controllers in conforming with metering requirements and resolving potential aircraft to aircraft conflicts. NASA-Ames and Technical Center researchers discussed the EDA connectivity to and integration with the high fidelity simulation platform (DESIREE) in preparation for a collaborative effort between the Technical Center, NASA-Ames, and CAMI. (B. Willems, WJHTC/ACT-530)

More information on human factors research can be found at the FAA Human Factors (AAR-100) web site: http://www.hf.faa.gov

Mark D. Rodgers
FAA (AAR-100)

CALENDAR

February 12-13, 2002 – FREE Flight Safety Boeing Maintenance Human Factors Awareness Training for Managers, Seattle, WA http://www.fsbti.com/

February 14-16, 2002 - Helicopter Association International Heli-Expo, Orange County Convention Center, Orlando, FL http://www.heliexpo.com/preliminary.htm

February 26-March 3, 2002 – Air Freight Expo 2002, Shangri-La Hotel, Singapore http://www.eyefortransport.com/asia2001

February 26-March 3, 2002 – Asian Aerospace 2002, Singapore http://www.asianaerospace.com/

February 28-March 1, 2002 – Aviation Safety Symposium, Buena Park, CA http://www.faa.gov/

March 2002 – European Transportation Leaders Conference, Landmark Hotel, London http://www.aviationnow.com/conferences

March 7-8, 2002 – Potomac Chapter Human Factors and Ergonomics Society Mid-Year Symposium, Ft. Belvoir Officer's Club, Virginia mailto:jerrykrueg@aol.com

March 10-12, 2002 – 2002 Air Freight Management Conference & Exposition, The Westin Diplomat Resort Country Club and Spa, Hollywood, FL http://www.aemca.org/

March 11-15, 2002 – Global Cargo Week & Dangerous Goods by Air Conference & Exhibition, Sofitel Forum Rive Gauche, Paris, France http://www.iataonline.com/

March 12-13, 2002 – FAA Aviation Forecast Conference, Wash, DC http://api.hq.faa.gov/Conference/welcome.htm

March 13-15, 2002 – 13th Annual International Women in Aviation Conference, Nashville, TN http://www.wiai.org/

March 26-28, 2002 – Aviation Suppliers & Services Super Show, Indianapolis, IN http://www.as3.com/

April 2-4, 2002 – 16th Symposium on Human Factors in Aviation Maintenance, San Francisco, CA http://www.galaxyscientific.com/2002hfams/index.html

April 8-11, 2002 – Aircraft Interiors Expo 2002, Hamburg, Germany http://www.ukintpress.com/airexpo

April 9-11, 2002 – Maintenance, Repair and Overhaul Conference & Exhibition, Phoenix Convention Center, Phoenix, AZ http://www.aviationnow.com/conferences

April 14-15, 2002 – FAA General Aviation Forecast Conference, Wichita, KS http://api.hq.faa.gov/Conference/welcome.htm

April 14-15, 2002 – FREE Flight Safety Boeing Maintenance Human Factors Awareness Training for Managers, Seattle, WA http/://www.fsbti.com

April 23-25, 2002 – NBAA Leadership Conference, Nashville, TN http://www.nbaa.org/

April 29-May 2, 2002 – DoD HFE TAG, Clarion Hotel Bayview, San Diego, CA http://dtica.dtic.mil/hftag

May 5-9, 2002 – 73rd Annual Scientific Meeting of the Aerospace Medical Association, Queen Elizabeth's Hotel, Montreal, Canada http://www.asma.org/

May 6-12, 2002 – International Aerospace Exhibition and Conference, Berlin Brandenburg International Airport, Berlin, Germany http://www.ila-berlin.com/

May 20-22, 2002 – 11th Annual Phoenix International Aviation Symposium, The Phoenician Resort, Phoenix, AZ http://www.phxskyharbor.com/

May 28-30, 2002 – EBACE2002, Geneva, Switzerland http://www.ebace.com/

June 13-14, 2002 – Aviation Conference and Exposition, Oklahoma City, OK mailto:skymarket@aol.com

August 27-30, 2002 – Measuring Behavior 2002, 4th International Conference on Methods and Techniques in Behavioral Research, University of Amsterdam, Amsterdam, The Netherlands http://www.noldus.com/events/mb2002/index.html

September 16-18, 2002 – Conference on Aerospace Materials, Processes and Environmental Technology, Huntsville, AL http://ampet.msfc.nasa.gov/

September 17-20, 2002 – International Air Cargo Forum, Hong Kong http://tiaca.org/

September 23-27, 2002 – Human Factors and Ergonomics Society 46th Annual Meeting, Pittsburgh Hilton and Towers, Pittsburgh, PA http://www.hfes.org/

October 23-25, 2002 – International Conference on Human-Computer Interaction in Aeronautics, Massachusetts Institute of Technology, Cambridge, MA http://www-eurisco.onecert.fr/events/hci-aero2002.html/

October 27-31, 2002 – 21st Digital Avionics Systems Conference, Hyatt Regency Hotel, Irvine, CA http://www.dasconline.org/

April 7-27, 2003 – Aviation World's Fair, Newport News/Williamsburg, VA http://www.worlds-fair.com/ or http://aviation-worlds-fair.com/

May 4-9, 2003 – 74th Annual Scientific Meeting of the Aerospace Medical Association, Convention Center, San Antonio, TX http://www.asma.org/

October 13-17, 2003 – Human Factors and Ergonomics Society 47th Annual Meeting, Adams Mark Denver Hotel, Denver, CO http://www.hfes.org/

May 2-7, 2004 – 75th Annual Scientific Meeting of the Aerospace Medical Association, Egan Convention Center, Anchorage, AK http://www.asma.org/

September 20-24, 2004 – Human Factors and Ergonomics Society 48th Annual Meeting, Sheraton New Orleans Hotel, New Orleans, LA http://www.hfes.org/

Note: Calendar events in Italics are new since the last Newsletter

Comments or questions regarding this newsletter?
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